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In other strand the DNA polymerase produces short segments of DNA molecules These segments or fragments are known as 'Okazaki fragments' and the strand is known as 'lagging strand'.

The short fragments or 'okazaki segment' are again joined together by another enzyme known as DNA lygase.

Proof reading:-

Proof reading and DNA repair-
During the process of replicati n accuracy of base pairing essential even then error takes place it may be one in ten thousand which is finally rectified by removing the wrong base and replacing the correct one. it occurs by repair enzyme. Proof reading ensures the formation of identical DNA strands

These enzymes are capable to break the lactose into glucose and galactose.

The lactose operon has five specefic genes known as a regulator gene which is also known as inhibiter, The operator gene and 3) Structural genes which are known as Z, Y, A.

They are capable to code for three enzymes which has been described as above.

'Z' gene codes for β galacto -cydase which is helpful in hydrolysis of lactose into galctose and glucose.

'Y' gene codes for permease. which is capable for permeability of the cell to β galcocydase.

'A' gene codes for trans-acetylase they are located adjacent to each other they are collectively known as structural genes because they contain the information to determine the sequence of amino acids present in the proteins.

All the three genes are regulat by a single gene known as operator which is present at the begigning of cistron 'Z'. The operator and the structural genes are collectivel known as 'operon' which acts like a switch (Operator gene is off or on).

The function of opercitor gene is dependent on a regulator gene known as inhibiter gene which is found at some distance away from it.
~~The repressure~~

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The inhibitor gene regularly transcribes messenger RNA to produce repressure protein. lactose is the substrate for enzyme β galactosydase. hence it is called inducer

In the absence of Inducer:-

Repressure protein may bind with the operator gene

↓

It blocks the activity of operator gene. (turned off)

↓

No enzyme is foorm.

In presence of Inducer:- (lactose)

↓

The repressure protein may not bind with the operator gene.

↓

The operator gene remains active and enzymes are form (turned on)

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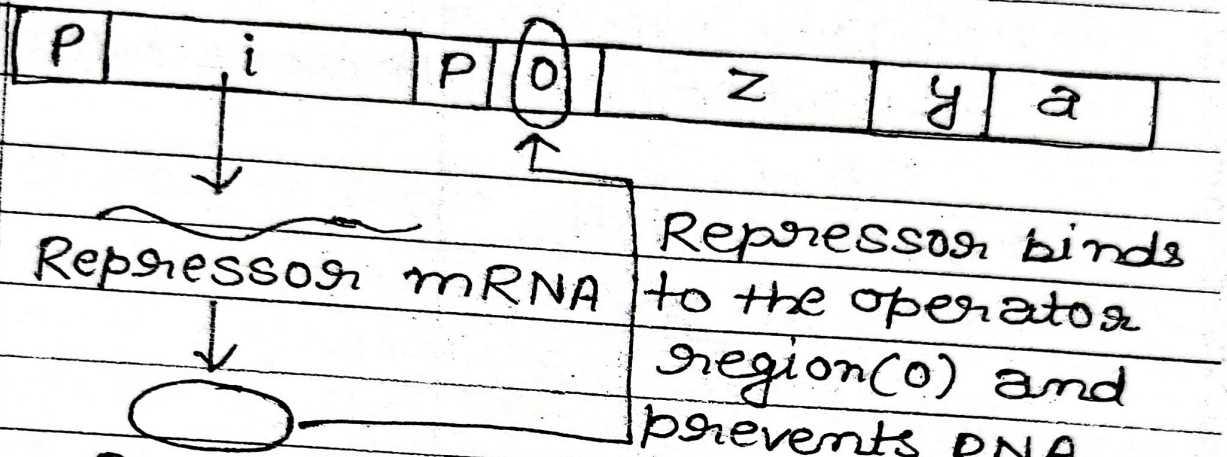
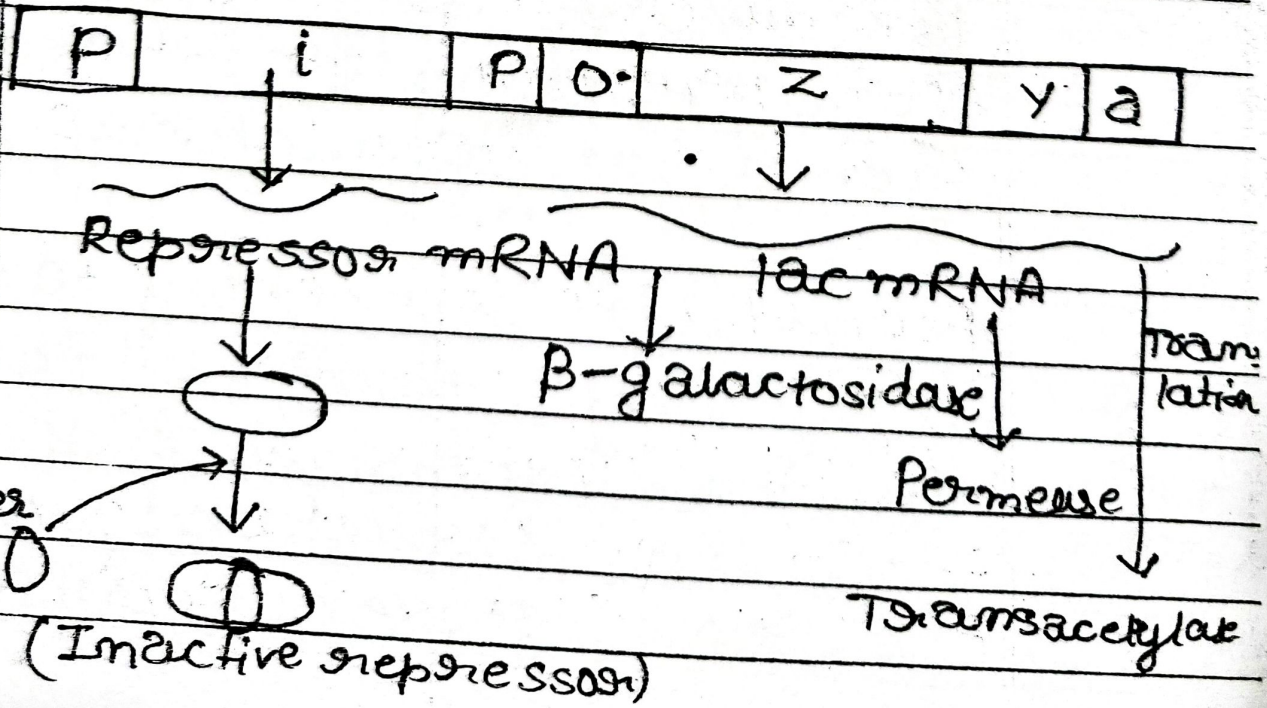
The three structural gene express themselves and finally enzymes are form.

In absence of inducer



In presence of inducer.



Ques. Write short notes on the following terms —

(1) Synzoospore → It is the unit structure of asexual reproduction, which is formed under favourable condition inside the club shaped sporangium of Vaucheria.

It is treated to be the compound zoospore by virtue of having several nuclei, flagella & a central vacuole. A simple zoospore is always uninucleate & biflagellate (sometimes quadriflagellate).

The number of flagella available in a synzoospore is just double the number of nuclei present there in, so one nucleus, ~~of course~~, of course, is capable of producing two flagella. This type of spore itself is a coenocyte by virtue of having a distinct central vacuole, since the normal zoospore lacks it.

Prior to its formation the nuclei & chloroplasts orient their position in such a way that all the chloroplasts are shifted from periphery to centre & nuclei from centre to the periphery. Protoplast inside the

Sporangium Contracts. & all the nuc
individually produce two flagella.
this way, a single Synzoospore is
produced per zoosporangium.

fully develope
elliptical or subspherical zoospore liber
through an apical pore. when swarmi
activity in water ceases, the zoospor
settles to the bottom, withdraws its
all flagella reorients chloroplasts &
nuclei & then germinates directly
by putting forth 1-3 germ tubes

Plurilocular sporangia ⟹ Formation of plurilocular sporangium by the sporophytic plant of ~~Ecto~~ Ectocarpus is a characteris-tic feature.

The terminal cell of the branchlet functions as the sporangial mother cell. It enlarges & contains numerous chromatophores. It then undergoes repeated divisions to form a vertical row of 6-12 cells. Subsequently all these cells undergo vertical division. The nuclear divisions involved are mitotic. As a result of repeated transverse & vertical divisions an elongated multicellular cone like structure consisting of several hundred small cubical cells arranged in 10-40 transverse tiers is produced. It is the plurilocular sporangia.

The protoplast of each compartment metamorphoses into a single biflagellate zoospore. Since the nuclear division involved in the differentiation of spores is mitotic, the resultant zoospore are diploid structures belonging to the category of mitospores.

The mature sporangium dehisces usually by an